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## PAGE ONE

# Oil Industry's Refining Squeeze Limits Prospects of Price Relief

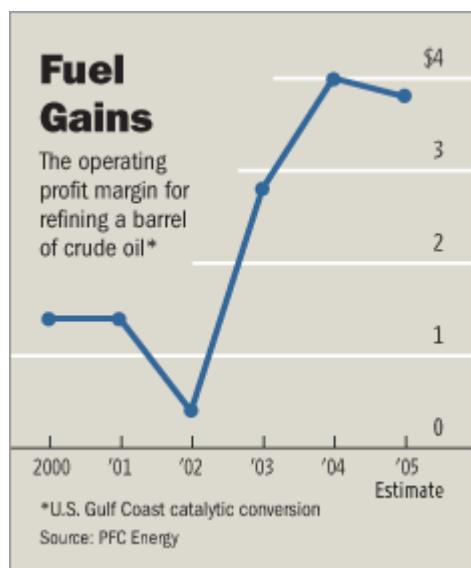
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Even if high oil prices ease, prospects for cheaper gasoline, diesel and jet fuel are likely to be limited for at least several years by a growing global problem: a severe crunch in refining capacity.

Previously, the shortage of plants to refine and process crude oil into usable products has been largely a problem for the U.S., by far the world's largest oil consumer. But growing demand for oil from China, India and other rising powers is aggravating the shortfall in refining and threatening to keep prices elevated for years.

Global demand is expected to grow by nearly two million barrels a day this year -- from 82.5 million barrels a day last year -- but the world's capacity to refine and process crude oil is expected to grow by less than half that.

As a result, the recent move by the Organization of Petroleum Exporting Countries to crank up production of crude oil to nearly its limit isn't likely to translate into major price cuts for consumers any time soon. That could keep pressure on airlines, auto makers, trucking lines and other industries particularly sensitive to prices of oil-based fuels.




It's a problem that the world's energy and economy czars are focusing ever more closely on. "There is a bottleneck in refining world-wide," said Saudi oil minister Ali Naimi, the effective leader of OPEC, in a recent interview. He suggested that until the bottleneck is eliminated, demand for refined products will keep pressuring oil prices. Mr. Naimi's country has been under political pressure over the rise in oil prices.

Last week, Federal Reserve Chairman Alan Greenspan warned in a speech that "besides feared shortfalls in crude-oil capacity, the status of world refining capacity has become worrisome as well."

Oil prices began a long climb in early 2004 amid fears of a supply shortage and instability in the Middle East, rising as

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high as \$58.28 a barrel on April 4 on the New York Mercantile Exchange. They have trended downward since then, but remain volatile; yesterday, the price of a barrel of oil delivered in July closed up 51 cents a barrel, at \$49.16. Adjusted for inflation, oil prices remain well below the highs reached during the crunch of the late 1970s and early 1980s.

Some of the recent drop in crude-oil prices has translated to the pump. Since April 11, the price of a gallon of regular unleaded gasoline in the U.S. has fallen about 6%, to \$2.13 this week, though it remains up six cents from a year ago.

Moreover, the rise in crude-oil prices has hit other types of refined products even more severely. Jet fuel has been about \$1.44 a gallon in recent days on the New York Harbor, where it is traded, down from \$1.75 on April 1 but still up 47% from a year ago. Diesel fuel currently costs about \$2.16 a gallon, down from \$2.32 in mid-April but up from \$1.75 a year ago.

A slowdown in the world economy could reduce demand for gasoline and other refined products. But the economy continues to grow despite soaring energy prices, and demand for oil remains on the rise. Many industry analysts are forecasting a second peak in crude-oil prices later this year, to more than \$60 for a barrel of U.S. benchmark crude, because of tightening refining capacity.

"We don't know if they [refiners] can meet demand for the right products in the fourth quarter," says Roger Diwan, an analyst at Washington, D.C.-based PFC Energy.

Industry analysts say the refining shortage hits especially hard in the U.S. Refiners here haven't built a new plant since 1976, and remain reluctant to do so for a variety of reasons, including public resistance, expected returns on investment and environmental regulations.

In February, the most recent month for which figures are available, the U.S. imported about 12.5% of its gasoline -- nearly three times as much as a decade ago. Much of it comes from Europe, where motorists have been shifting to diesel-powered autos. In coming years, India and China are likely to slurp up more imported gasoline and diesel.

Though Saudi Arabia and other countries are adding refineries, it can take years to expand existing facilities and much longer to build new ones. Consequently, industry analysts and OPEC officials expect the refining crunch to keep product prices high until 2008 at the earliest. Global demand for oil products is once again expected to outpace refinery capacity growth next year.

"The first year that the situation could change is 2007," says Lawrence Goldstein, president of New York-based Petroleum Industry Research Foundation. He estimates that demand for oil products grew by 4.6 million barrels a day in 2003 and 2004, while refinery capacity grew by only 700,000 barrels a day.

Tight refining capacity has been an often overlooked factor in the rise in oil prices in the past 18 months. The world has plenty of so-called heavy crude -- much of it in Saudi Arabia -- but most refineries around the world aren't equipped to handle this high-sulfur oil.

Even when plants can refine heavy crude, it's a more costly process than refining light crudes, which are lower in sulfur and easier to refine but less widely available. As a result, refiners are in a bidding war for light crudes -- pushing their cost up. (Refined heavy crude also tends to sell at a better price for refiners than light crude.)

Contributing to the pressure, countries around the world have been tightening emissions standards for diesel and gasoline. Many refineries, especially in developing nations, aren't equipped to meet their standards.

In part, that's because refining was long an industry stepchild, earning modest profits at best because of the world-wide glut in capacity. Until the recent crunch, many of the world's biggest oil companies were reluctant to invest in refining. Some even shed such operations over the years, directing investment dollars to the much more profitable business of finding and producing crude oil.

Today, the squeeze is proving to be a bonanza for refiners. **Valero Energy Corp.**, the U.S. refining giant, expects its financial results for the second quarter, historically a weak period for refiners, to be the best for the period in its history.

The refiners' advantage shows up best in the refining margin -- that is, the difference between the price of refined products like gasoline and jet fuel and that of a barrel of crude oil. Since 2003, refining margins have been rising for all kinds of oil products, most sharply for diesel fuel, jet fuel and heating oil.

The current refining margin for gasoline in the U.S. Gulf Coast, for instance, is \$7.64 for a barrel of benchmark West Texas Intermediate -- a type of light, sweet crude. That's more than double the average of \$3.66 a barrel from 1994 through 2003, according to Aaron Brady, an analyst at Cambridge Energy Research Associates of Cambridge, Mass.

Margins for diesel fuel are in the stratosphere, especially abroad. Refiners in the Netherlands, using a type of oil known as North Sea Brent Crude, had margins of \$16.25 a barrel in the first quarter, compared with \$13 in 2004 and an average of \$5.80 in the period from 1998 to 2003.

Given such margins, Philip K. Verleger, a senior fellow at the Washington-based Institute for International economists, says truck drivers in the U.S. may see diesel prices rise to \$3 a gallon this winter, and to \$4 a gallon in winter 2006.

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